If the maritime community, including the U.S. Coast Guard, is not interested in developing a separate maritime safety subsystem, there are at least two alternatives that would use AMSC's existing systems to create a virtual separate system that could be assigned spectrum dynamically to accommodate peaks in demand for channels.

One such approach uses the Skycell Virtual Network (VN) capability. Maritime MESs would use the general pool of voice channels for routine communications. Additionally, Maritime MESs could be assigned to a VN dedicated to Maritime Distress and Safety communications. Some number of channels would be dedicated solely to that VN, and be inaccessible from non-maritime terminals. Maritime terminals would have defined phone numbers, for example those of the Coast Guard Rescue Coordination Center ("RCC"), stored in their speed dial memory. The stored numbers would include the access code for the Distress and Safety VN. When required, the user could recall and dial one of those numbers and have rapid access to the system. The VN could be set up to bar calls to numbers other than the designated safety numbers, to prevent users from using the VN for routine calls. Since the dedicated channels assigned to the Maritime Distress and Safety VN could be used only to call designated numbers, traffic per channel could be sufficiently low to provide a very high grade of service. More channels could be added as required in response to increasing traffic volume.

The other approach involves the use of AMSC Skycell Plus service, which provides a mode of service wherein a designated group of users, a "talk group," share a common communications channel. To the users, the service appears to be half-duplex, even though the control functions are full duplex, retaining full control over the MES at all times. Within a group, only one user can transmit on the communications channel at a time, and all users in the

group can receive the transmission. The coverage area of a Skycell Plus talk group is at least the area of one beam from the satellite and can be configured to include the entire AMSC-1 coverage area. Regional groups can be configured so that all users in a particular region (such as off the coast of New England) would listen to the same channel.

A talk group could be designated for Maritime Distress and Safety in each satellite beam. The Coast Guard RCC would be equipped with a Skycell Plus MES as would the applicable ships. The typical user's MES would also be configured to operate in normal Skycell mode to make phone calls. When a user, either at the RCC or at sea, activates the push-to-talk function, that user's voice will be broadcast to all other users in that talk group, including the RCC. Further, the RCC can activate the push-to-talk function and broadcast messages to all users in the talk group. If, in the course of a routine broadcast by a user or the RCC, another user has an emergency, that user can invoke priority and preempt the current speaker to request assistance. In this type of system, one frequency pair can serve a number of users - the actual number depending on traffic volume - up to a maximum of 10,000 users per channel. That frequency pair could be reserved solely for this use, and so channel availability would be assured. Additional talk groups could be added. Each MES may belong to as many as 15 talk groups. Different talk groups could be used for different types of message traffic or for handling separate distress situations. Each talk group could be assigned a dedicated communications channel pair, reducing or eliminating the need for preemption. Since the dedicated channels assigned to the Maritime Distress and Safety talk group could be used only for broadcasting messages within the talk group, traffic per channel could be sufficiently low to provide a very high grade of service. More talk groups could be added as required in response to increasing traffic volume. Growth in

demand can be accommodated up to the limits imposed by the satellite capacity and the coordinated lower L-band spectrum.

Appendix B

Although some of the specific provisions of Appendix B are quite ambiguous, AMSC believes that it can accommodate the requirements, either by assisting in the deployment of the kind of separate subsystem described above or through the use of the alternative "virtual separate subsystem" approaches that are also described above.

There is one set of proposed requirements, however, which need to be clarified. Requirements Nos. 2 and 8 for MESs may be interpreted to require terminals to be capable of being interrupted during a transmission to receive a higher priority incoming call.[1/] LES Requirement No. 9 contains a similar provision.[2/] Given the relatively short length of most transmissions, the reasonable approach to a busy signal in an emergency will typically be to try again momentarily. Requirement No. 8 is understandable in the context of a packet data or data

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1/ MES Requirement No. 2 provides as follows:

> Each MES with a requirement to handle maritime distress and safety communications shall be capable of recognizing message and call priority identification when transmitted from its associated Land Earth Station ("LES").

MES Requirement No. 8 provides as follows:

> Each MES with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

2/ LES Requirement No. 9 provides as follows:

> An LES with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

message communications system. In those cases, messages or packets from a ship may be queued, either in the MES or in other shipboard communications equipment. A high priority message or packet could then be placed at the head of the queue, and, if necessary, preempt an ongoing outbound transmission. In voice systems, it is reasonable to expect that preemption be accomplished manually, with the ship's crew disconnecting a low priority call so that a higher priority call may be placed. There is no need for a requirement that this preemption be done automatically by the MES.

AMSC's data services queue messages for processing, distribution, and transmission, so those services have the capabilities discussed in MES Requirements Nos. 2 and 8 and LES Requirement No. 9. Thus, AMSC proposes the following revisions to the requirements, to limit them to data terminals:

MES 2 (MOD)

> Each MES with a requirement to handle maritime distress and safety data communications shall be capable of either (1) recognizing message and call priority identification when transmitted from its associated Land Earth Station ("LES") or (2) accepting message and call priority identification embedded in the message or call when transmitted from its associated LES and passing that identification to shipboard data message processing equipment.

MES 8 (MOD)

> Each MES with a requirement to handle maritime distress and safety data communications shall have the capability within the station to automatically preempt lower precedence data traffic. This capability may reside in either the MES or in the shipboard message processing equipment.

LES 9 (MOD)

> An LES with a requirement to handle maritime distress and safety data communications shall have the capability within the station to automatically preempt lower precedence traffic.

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DECLARATION

I, Richard Evans, hereby attest to the following:

1. I am Senior Scientist of AMSC Subsidiary Corporation.
2. I am the technically qualified person responsible for review of the foregoing Comments and for preparation of its Technical Appendix.
3. I declare under penalty of perjury that the Comments and Technical Appendix are true and correct to the best of my knowledge.

Richard O. Evans

Richard Evans

September 17, 1996